DOCUMENT RESUME

ED 250 906 FL 014 061

AUTHOR Adiv, Ellen; Dore, Francine
TITLE Integrating into the French Sector: An Evaluation of Linguistic and Academic Achievement of Students from Different Ethnic Backgrounds at the Grade 3 Level.
INSTITUTION Protestant School Board of Greater Montreal (Quebec). Instructional Services Dept.
PUB DATE Jul 83
NOTE 35p.; For related documents, see FL 014 653-656. Summaries in both French and English appear in the document.
PUB TYPE Reports - Research/Technical (143)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Academic Achievement; Elementary Education; *Ethnic Groups; Foreign Countries; *French; Grade 3; Haitian Creole; *Haitians; *Language Proficiency; *Social Integration
IDENTIFIERS *Quebec (Montreal)

ABSTRACT

A study of the linguistic proficiency and academic achievement of grade 3 students from different ethnic backgrounds included three groups: (1) ethnic minority students who spoke no French at home; (2) Haitian students who spoke French and Creole at home; (3) monolingual French speakers. All students attended schools in the French sector of the Protestant School Board of Greater Montreal. French language proficiency was measured by a reading test, a vocabulary and grammar test, and an oral production test. Tests were administered in the spring of 1982 and 1983 to 274 children. Academic achievement was measured by two mathematics tests. Results show that: (1) the first group scored significantly lower than the others on all the French language tests except a grammar subtest; (2) there were no significant differences beween the second and third groups on the written French tests, but the oral performance of the second group was significantly lower; and (3) the group differences on the mathematics tests were marginal. It is concluded that the academic achievement of the students from various ethnic backgrounds differs only a little from their francophone peers', and the level of French proficiency of the Haitian students is similar to that of native speakers of the same age, except for oral production. However, the other students from various ethnic backgrounds have not yet reached native-like competence in French. (Author/MSE)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED250906

INTEGRATING INTO THE FRENCH SECTOR: AN EVALUATION OF LINGUISTIC AND ACADEMIC ACHIEVEMENT OF STUDENTS FROM DIFFERENT ETHNIC BACKGROUNDS AT THE GRADE 3 LEVEL

Ellen Adiv

&

Francine Doré

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

This document has been reproduced as received from the person or organization originating it.
Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Protestant School Board

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

FL014 061

Instructional Services Department

The Protestant School Board of Greater Montreal

July 1983

Acknowledgements

This research was made possible by a research grant to the Instructional Services Department, The Protestant School Board of Greater Montreal, from the School Council of the Island of Montreal.

We would like to express our thanks to the principals, teachers, and students who participated in this research.

Résumé

Le but de cette recherche était d'évaluer l'habilité linguistique et le rendement académique d'élèves provenant de différentes communautés ethniques. Trois groupes d'élèves de 3e année ont pris part à cette étude: (1) un groupe d'élèves allophones qui ne parlaient pas français à la maison (groupe ALL), un groupe d'élèves d'origine haïtienne qui parlaient français et créole à la maison (groupe HAI) et un groupe d'élèves francophones unilingues (groupe FR). Tous les élèves étudiaient dans des écoles appartenant au secteur français de la C.E.P.G.M.

L'habilité linguistique a été évaluée à l'aide des tests suivants: un test de lecture, un test de vocabulaire et de grammaire (test de rendement en français) et un test de production orale. De plus, on a administré deux tests de mathématiques pour évaluer le rendement en mathématiques.

Les résultats indiquent que: (1) le groupe ALL a obtenu des résultats nettement inférieurs à ceux des groupes HAI et FR à tous les tests de français sauf le sous-test de grammaire du test de rendement en français. (2) Il n'y avait pas de différence significative entre le groupe HAI et le groupe FR aux tests de lecture et de rendement en français. Cependant le groupe HAI a obtenu des résultats nettement inférieurs à ceux du groupe FR en expression orale. (3) Il n'y avait qu'une différence minime entre les groupes aux tests de mathématiques.

Les résultats nous mènent à conclure que la performance des élèves de diverses origines ethniques est presque équivalente à celle des francophones en ce qui concerne le rendement académique. De plus,

l'habilité linguistique en français des élèves haïtiens est comparable à celle d'un locuteur natif du même âge, sauf à l'expression orale. D'autre part, les autres élèves non francophones n'ont pas encore atteint le niveau de compétence linguistique des locuteurs natifs.

Summary

The purpose of this study was to assess the linguistic proficiency and academic achievement of grade 3 students from different ethnic backgrounds. Three groups of students participated in this study: (1) a group of ethnic minority students who spoke no French at home (ALL group), (2) a group of Haitian students who spoke French and Creole at home (HAI group) and (3) a group of monolingual French speakers (FR group). All the students attended schools belonging to the French sector of the P.S.B.G.M.

French language proficiency was measured by the following tests: a reading test, a vocabulary and grammar test (test de rendement en français) and an oral production test. Academic achievement was measured by two mathematics tests.

The results indicate that: (1) The ALL group scored significantly lower than the HAI and FR groups on all the French language tests except the grammar subtest of the test de rendement. (2) There were no significant differences between the HAI group and the FR group on the written French tests. However, the oral performance of the HAI group was significantly lower than that of the FR group. (3) On the mathematics tests the difference among the three groups was marginal.

The results lead to the conclusion that the academic achievement of the students from various ethnic backgrounds differs only little from that of their francophone peers. Moreover, the level of French proficiency of the Haitian students is similar to that of native speakers of the same

age, except for oral production. On the other hand, the other students from various ethnic backgrounds have not yet reached native-like competence in French.

Table of Content

Pages

Introduction 1

Method 2

The subjects 2

The tests 4

Procedure for administering the test..... 6

Results 7

Summary and Discussion 12

Reference Notes 15

Tables 16

Appendix I 26

Appendix II 27

There are presently many students in the French sector of the P.S.B.G.M. whose mother tongue is not French. The students come from different ethnic backgrounds and many of them speak English in addition to their language of origin. Most of these students attend an intensive French language program (classe d'accueil) in kindergarten and are then integrated into regular French classes. During their first year in the regular program, the non-native students still receive additional instruction in French (post-accueil courses). However, from the second year onwards these students are expected to be sufficiently proficient in French to follow the program without difficulty.

Over the past years, a number of studies have been conducted to evaluate the effectiveness of the accueil program at the kindergarten level (Adiv, Notes 1,2,3) . Further evaluations have been carried out to assess the non-francophone students' integration into the French sector after they have completed the classe d'accueil program in kindergarten. The results of the first of these evaluations (Adiv, Note 4) reveal that by the end of grade 1, the non-francophone students performed as well as their native French peers on comprehension tasks, but not on production tasks.

In order to assess the effect of the presence of native French speakers in the classroom, a study was conducted the following year at the grade 2 level, (Adiv, Note 5) distinguishing between classrooms composed entirely of students from ethnic minority groups (non-integrated classes) and classrooms with a mixed native and non-native French population (integrated classrooms). The results reveal prac-

tically no differences between the integrated and the non-integrated students in terms of French language proficiency. Moreover, these two groups did not differ significantly from the native control group in their performance on the grade 2 mathematics test. On the other hand, the results indicated that the ethnic minority students still scored significantly lower than the native French speakers on a number of French language tests.

Another part of the study looked at the performance of Haitian students in grade 2, since students of Haitian background have been noted to face many learning problems. Interestingly, the Haitian students in this study performed as well as and, in some cases, better than the other students.

The present study was undertaken to assess French language proficiency and academic achievement of students from different ethnic backgrounds after a further year of schooling in the regular French system, i.e., at the end of grade 3. As in the previous study, it was decided to keep the Haitian students as a separate group. In order to have a larger sample, particularly of the Haitian students and of the native French students, the data was collected over two consecutive years (spring 1982 and spring 1983).

Method

Subjects

Two hundred seventy four students participated in this study. All

the students were studying in grade 3. The students were divided into three groups: (1) a group of students from different ethnic backgrounds, excluding students whose mother tongue was either French or Creole (hereafter allophones or ALL group); (2) a group of students of Haitian origin (hereafter Haitians or HAI group) and a group of monolingual French speakers (hereafter francophones or FR group). The exact sample sizes of the different groups are summarized in Table 1A. Most of the francophone students were native French Quebecers. The others came from countries where French was either the national language or one of the main languages spoken in that country. In either case, French was the only language spoken in the home of the students. The Haitian students spoke either Creole or Creole and French at home.

The students attended eight different schools (see Table 1C for the names of the participating schools). In all but one of the schools, the grade 3 classes were integrated classes, i.e., the classes contained allophone and francophone students. The proportion of francophone students varied, however, greatly between the schools. In four of the schools, thirty to fifty percent of the students were francophones. In the other three schools, there was only a very small number of francophones in each class.

All the students came from middle to lower-middle socio-economic class homes except in two schools where the income bracket of the parents ranged from middle to upper-middle socio-economic class levels.

In order to control as much as possible the effect of differences in mental capacities that could exist between the groups,

the students were administered the Standard Progressive Matrices Test (revised order, Raven 1956).

The Tests

Two batteries of tests were administered: (1) a set of French language tests and (2) a set of mathematics tests.

(1) The French Tests

The following French language tests were administered: (i) a reading test(test de lecture), (ii) a test de rendement en français and (iii) an oral production test (test d'expression orale).

(i) Test de lecture

This test was developed by the Research Department of the P.S.B.G.M. It consists of twelve reading passages of varying length (20-100 words). The passages consist of announcements, quizzes and short stories. Each passage is followed by several questions with multiple-choice answers (22 questions in all). Except for the example given at the beginning of the test, the students read all the passages and the questions with their multiple-choice answers on their own.

(ii) Test de rendement en français

This test was developed and standardized by the Catholic School Commission of Montreal (C.E.C.M.) for use in its schools. A different form is used at each grade level (gradel—grade 9). The form administered in the present study was the test de rendement en français no 3. It consists of eight sub-tests and assesses various language arts skills in

the areas of spelling, vocabulary, sentence interpretation and grammar. In all, the test contains 35 items. All the items are multiple-choice items. The stimulus items were presented orally and in written form. The multiple-choice answers were only presented in writing. In the analysis of the results, all the sub-tests, except the one pertaining to spelling (3 items) were regrouped into the following three categories: (i) vocabulary (9 items), (ii) syntax (13 items) and (iii) grammar (10 items).

(iii) Test d'expression orale

This test was developed by the Research Department of the P.S.B.G.M. It contains four sets of pictures. Set I consists of a single picture. Sets II, III and IV consist of several pictures. The pictures in each of these sets convey a story which the students were asked to narrate. If a student did not complete the story, he or she was urged on by questions such as "et qu'est-ce qui se passe ici?" (and what is happening here?).

To assess the students' proficiency in oral production, two different measures of evaluation were used. First, the responses given to each picture (21 in all) were scored as either correct or incorrect. Incorrect responses were classified as either grammatically incorrect or semantically incorrect. Second, each student's speech sample was evaluated by two raters, working independently, on four different dimensions: pronunciation, grammar, vocabulary and communication. The ratings ranged from a maximum of 5, indicating native-like skill, to a minimum of 1, indicating very poor skill. A value of 0 was given in cases where no production was elicited or where production was so minimal that it could

not be evaluated. The evaluations of both raters were combined to form an average score for each dimension.

(2) The Mathematics Tests.

The following mathematics tests were administered: (i) the test de rendement en mathématiques no 3 and (ii) the test de mathématiques de la C.E.P.G.M.

(i) Test de rendement en mathématiques no 3

This test, like the test de rendement en français was developed and standardized by the Catholic School Commission of Montreal (C.E.C.M.). It consists of 37 multiple-choice items. These items assess different mathematics skills such as numeration, problem solving and recognition of basic geometric shapes.

(ii) Le test de mathématiques de la C.E.P.G.M.

This test was developed by the P.S.B.G.M. and has been administered in French and in English in all its schools since 1981. The test contains fifty items and measures mostly the same concept as the test de rendement en mathématiques. However, the display of the items and the wording of the problems is quite different from those in the previously mentioned test. Moreover, this test is administered at the end of the school year, whereas the test de rendement en mathématiques is administered in November, at a time when a large part of the grade 3 mathematics program has not yet been taught. It is for this reason that it was decided to use this second mathematics test in addition to test de rendement en mathématiques.

Procedure for Administering the Tests

All the tests, except the oral production test, were group admin-

istered to intact grade 3 classes. In keeping with the testing dates followed by the C.E.C.M., the test de rendement en français and the test de rendement en mathématiques were administered in November. All the other tests were administered in April.

The oral production test was administered individually to a sub-sample of the students (for exact sample sizes see Table 1B). Each testing session lasted 8-10 minutes and the entire session was tape-recorded.

All the tests, except the test de mathématiques de la C.E.P.G.M. were administered by native French-speaking testers from the Research Department. The test de mathématiques de la C.E.P.G.M. was administered by the classroom teachers since they constitute part of the P.S.B.G.M.'s regular testing program.

Results

The students' scores on the Standard Progressive Matrices Test were analyzed first, using an analysis of variance procedure. The main variable was group membership (ALL, HAI, FR). The results of this analysis reveal significant differences among the groups (see Table 2). Since these differences could influence the results of the other tests, the latter were analyzed using an analysis of covariance procedure (see Appendix 1 for a short explanation). Separate analyses were carried out for each test and subtest. In addition, wherever significant differences were noted, a Newman Keuls procedure of multiple comparisons was used to

determine which groups differed significantly from one another. The results of all these analyses are summarized in Table 3 (French test results) and Table 4 (mathematics test results).

(1) The French Test Results

(i) Test de lecture

The results of the test de lecture show that the ALL group ($\overline{X}$=14.20) scored significantly lower than the HAI group ($\overline{X}$ = 16.78) and the FR group ($\overline{X}$ =17.32). There was no significant difference between the latter two groups.

(ii) Test de rendement en français

In the test de rendement there were significant differences between the ALL group and the other two groups on the total score (ALL group, $\overline{X}$ = 15.28; HAI group, $\overline{X}$ = 20.14; FR group, $\overline{X}$ = 21.56) and on two of the subtests (vocabulary and syntax). On the other hand, there were no significant differences between the ALL group and the other two groups on the grammar subtest. On none of these tests were the differences between the HAI group and the FR group significant. When the above results are converted into stanine scores (see Appendix II for a brief explanation). and compared to test norms for the French population of the C.E.C.M. in grade 3, the ALL group (stanine 4) ranks one step below the HAI and FR groups (stanine 5). All three groups performed, however, within the "average range" of the scale.

(iii) Test d'expression orale

The results of the global evaluation show significant differences among the three groups on all four ratings (pronunciation, grammar,

vocabulary and communication). In each case the ALL group was rated significantly lower than the HAI group who, in turn, was rated significantly lower than the FR group (for exact rating values see Table 3). The results of the item analysis follow the same pattern as the global ratings. The ALL group ($\overline{X}$ = 10.74) produced significantly fewer correct responses than the HAI group ($\overline{X}$ = 15.41) who, in turn, produced significantly fewer correct responses than the FR group ($\overline{X}$ = 18.88). The analysis of the incorrect responses reveals that practically all the errors were grammatical errors. For the ALL group this type of incorrect response constituted practically 50% of all the responses produced by this group ($\overline{X}$ = 10.25), whereas the HAI students produced significantly fewer such incorrect responses ($\overline{X}$ = 5.92). The FR students made practically no grammatical errors ($\overline{X}$ = 2.89). In contrast, the FR students produced most of the semantically inappropriate responses. The total number of students producing such responses was, however, very small and these results were, therefore, not included in the statistical analysis.

(2) The Mathematics Test Results

(i) Test de rendement en mathématiques

On the test de rendement there was a marginally significant difference among the groups ($F = 4.35$ $p < .05$). In consequence, the Newman Keuls analysis was not significant . An informal comparison of the results shows that the ALL group ($\overline{X}$ = 21.04) scored numerically lowest, followed by the HAI group ($\overline{X}$ = 22.65) who scored only slightly lower than the FR group ($\overline{X}$ = 23.54).

The conversion of these results into stanine scores reveals that, as on the test de rendement en français, the ALL group (stanine 4) ranks one step below the HAI and FR groups (stanine 5). All three groups performed, here too, within the "average range" of the grade 3 population of the C.E.C.M.

(ii) Test de mathématiques de la C.E.P.G.M.

The results of this test are similar to those of the test de rendement. Here again the difference among the groups was only marginally significant ($F = 3.22$, $p < .05$). Numerically the HAI group ($\bar{X} = 31.33$) scored lowest, followed by the ALL group ($\bar{X} = 33.17$) and the FR group ($\bar{X} = 34.95$). It should be noted that this test was not administered in the participating schools in 1983; therefore all these results pertain only to the 1982 testing.

The Effect of Francophone Peers in the Classroom

In order to see whether the number of francophone students present in the classroom affects performance, the results of the ALL group were re-analyzed according to the following grouping: (1) schools in which 35-50% of the grade 3 students were francophones (integrated or INT group), (2) schools in which 20-25% of the grade 3 students were francophones (partially integrated or PINT group) and (3) schools in which there were practically no francophones (non-integrated or NINT group). The latter group comprised two schools. One of these schools had a large Haitian population (44% in grade 3). Since most of the Haitian students spoke also French at home, it was decided to keep this group apart [integrated with Haitian or HINT group (for exact sample

sizes and schools in each group see Table 5)]. Here again, the results obtained by the four subgroups on the Standard Progressive Matrices Test were analyzed first. The differences between the groups were statistically significant (see Table 6) and all the other tests were ,therefore, analyzed using an analysis of covariance procedure. The results of these analyses (see Tables 7 and 8) reveal no significant differences between the four groups on the French language tests except for two measures of the oral production test: grammar and vocabulary. Here the INT group (grammar, $\overline{X} = 3.77$; vocabulary, $\overline{X} = 4.09$) and the HINT group (grammar, $\overline{X} = 3.83$; vocabulary, $\overline{X} = 4.01$) were rated significantly higher than the NINT group (grammar, $\overline{X} = 3.20$; vocabulary, $\overline{X} = 3.34$). The vocabulary ratings for the INT and HINT groups were also significantly higher than those of the PINT group ($\overline{X} = 3.60$). Moreover, numerically, the same pattern was maintained on the other two measures pertaining to the global evaluation of the oral production (pronunciation and communication) and on the listening comprehension test. Thus, in descending order, the groups ranked as follows on the oral/aural tests: (1) INT and HINT groups, (2) PINT group and (3) NINT group.

On the mathematics tests, there was no significant difference among the groups on the test de rendement en mathématiques and only a marginally significant difference on the test de mathématiques de la C.E.P.G.M..

Summary and Discussion

The findings of this study can be summarized as follows:

(1) The ALL group scored significantly lower than the HAI and FR groups on all the French language tests except the grammar subtest of the test de rendement en français where there were no significant differences among the three groups.

(2) The performance of the HAI group was significantly lower than that of the FR group on all the measures pertaining to the evaluation of oral production. There were no other significant differences between the HAI group and the FR group on the French language tests.

(3) On the two mathematics tests, the difference among the three groups was marginally significant.

(4) Within the ALL group, the INT group and the HINT group were rated significantly higher than the PINT group and the NINT group on the vocabulary component of the oral production test. The INT group and the HINT group were also rated significantly higher than the NINT group on the grammar component of that same test. On the other tests there were no major differences among these four subgroups.

The major conclusion to be drawn from this study is that the allophone students' performance on practically all the French tests is markedly lower than that of the francophones, whereas the performance of the Haitian students does not differ significantly from that of the

francophones, except in the case of oral production.

Some of these findings, particularly the results pertaining to the oral performance, are similar to those noted in the grade 2 study (Adiv, Note 5). However, on the tests requiring more academically based skills, the differences in performance between the allophones and the francophones seem to be greater in grade 3 than in grade 2. This is particularly noticeable on the test de lecture where the between-group differences had only been marginal in grade 2. In a similar vein, the differences among the three groups on the test de rendement en mathématiques are more pronounced in grade 3 than in grade 2. It is possible that the reason for these outcomes lies in certain aspects of the grade 3 tests which are not directly related to the specific skills that are being tested. Closer examination of the grade 3 version of the test de rendement en mathématiques, in particular, reveals that the wording of the text (problems and questions) was much longer in the grade 3 version of the test than in the grade 2 version. Thus, it may be the case that a linguistic factor rather than achievement in mathematics affected the allophone students' performance on this test.

Another factor which must be taken into account when one compares the findings of the grade 3 study to those in the grade 2 study is the sample size of each group. In grade 3, the number of students was more than double of that in the grade 2 study. In consequence, there may have been greater individual differences within each group, a factor which affects the outcome of the statistical analysis.

Interestingly, within the allophone group, there were a number

of significant differences in oral performance between the integrated students and the non-integrated students. In contrast, the oral performance of allophone students integrated with Haitians did not differ significantly from that of allophone students integrated with monolingual francophones. It is noteworthy that, although previous studies had shown a tendency for students in integrated classes to perform better on oral French language tests than students in non-integrated classes (Adiv, Notes 2 and 5), this is the first time that these two groups differed significantly in their knowledge of grammar and vocabulary.

In conclusion, the findings of this study show that the allophone students' French language skills are still markedly lower than those of their francophone peers. On the other hand, their performance on French tests relating to skills which are developed within the school curriculum rank within the "average range" of the stanine scale established for a large segment of the Montreal grade 3 French population. Similarly, their performance in mathematics, although, slightly lower than that of their francophone peers, ranges within the "average range" of the stanine scale.

The most noteworthy finding of this study is perhaps the high level of performance of the Haitian students. Moreover, the contact between Haitian students and allophone students seems to be as beneficial to the latters' development of oral proficiency in French as the contact with monolingual francophone peers.

Reference Notes

1. Adiv, E. A comparison of early immersion and classes d'accueil programs at the kindergarten level. Instructional Services Department. The Protestant School Board of Greater Montreal, 1979.

2. Adiv, E. Starting French in kindergarten: the effects of program, mother tongue and other linguistic experience on second language development. Instructional Services Department. The Protestant School Board of Greater Montreal, 1980.

3. Adiv, E. The effect of a pre-kindergarten program on the development of second language proficiency. Instructional Services Department, The Protestant School Board of Greater Montreal, 1981.

4. Adiv, E. A comparison of early immersion and classes d'accueil programs at the grade 1 level. Instructional Services Department. The Protestant School Board of Greater Montreal, 1980.

5. Adiv, E. Integrating into the French sector: an assessment of linguistic and academic achievement of grade 2 students from different ethnic backgrounds. Instructional Services Department, The Protestant School Board of Greater Montreal, 1982.

Table 1A

Sample Sizes

Allophone group (ALL)	119
Haitian group (HAI)	56
Francophone group (FR)	99

Table 1B

Sample Sizes for the Oral Production Tests

Allophone group (ALL)	54
Haitian group (HAI)	18
Francophone group (FR)	38

Table 1C

Participating Schools

Maisonneuve	Ahuntsic	Westminster	Algonquin
Edouard VII	Ile-des-Soeurs	Van Horne	Willowdale

Table 2

Summary of Standard Progressive Matrices Test Scores[a]

ALL group	29.92
HAI group	27.75
FR group	31.99

F ratio: 5.29**

df: 2,271

** $p < .01$

[a]Maximum score is 48.

Table 3

Summary of French Test Results[a]

	ALL	HAI	FR	F ratio	df
Test de lecture (22)[b]	14.20	16.78	17.32	19.10***	2,258
Test de rendement en français - Total (35)	15.28	20.14	21.56	30.84***	2,249
- Vocabulary(9)	3.33	5.02	5.57	30.88***	2,247
- Syntax(13)	6.15	8.35	9.17	22.36***	2,247
- Grammar(10)	4.39	4.69	5.63	1.66	2,247
Test d'expression orale					
Global evaluation					
- Pronunciation(5)	3.84	4.25	4.80	45.82***	2,106
- Grammar(5)	3.51	4.32	4.64	46.88***	2,106
- Vocabulary(5)	3.69	4.31	4.74	54.96***	2,106
- Communication(5)	3.74	4.08	4.57	27.48***	2,106

Table 3 (cont'd)

Summary of French Test Results[a]

	ALL	HAI	FR	F ratio	df
Test d'expression orale(cont'd)					
Item Analysis(21)					
- Correct responses	10.74	15.41	18.88	33.20***	2,105
- Incorrect responses					
(i) grammatically	10.25	5.92	2.89	21.33***	2,94
(ii) semantically[c]	1.56	1.32	2.14	_____	_____

* $p < .05$

*** $p < .001$

[a] Mean scores joined by a line differ significantly from one another.

[b] Maximum scores ir parentheses.

[c] The number of students producing such responses was too small for statistical analysis.

Table 4

Summary of the Mathematics Test Results

	ALL	HAI	FR	F ratio	df
Test de rendement en math. (40)[a]	21.04	22.65	23.54	4.35*	2,250
Test de math. C.E.P.G.M. (50)	33.17	31.33	34.95	3.22*	2,143

* $p < .05$

[a]Maximum scores in parentheses.

Table 5A

Sample Sizes of the Four Subgroups within the ALL group

Integrated group (INT)	49
Partially integrated group (PINT)	30
Non integrated group (NINT)	20
Integrated with Haitians (HINT)	20

Table 5B

Classification of Schools According to Subgroups

INT	PINT	NINT	HINT
Maisonneuve	Edouard VII	Algonquin	Ahuntsic
Westminster	Willowdale		
Van Horne			
Ile des Soeurs			

Table 6

Results of the Standard Progressive Matrices Test Results for the Four Subgroups within the ALL Group[a]

INT	31.16
PINT	32.27
NINT	25.05
HINT	28.25

F ratio: 4.14**
df: 3,115

** $p < .01$

[a]Maximum score is 48.

Table 7

Summary of Grade 3 Test Results

for the Four Subgroups within the ALL Group[a]

	INT	PINT	NINT	HINT	F ratio	df
Test de lecture (22)[b]	15.01	16.60	13.90	14.97	1.18	3,109
Test de rendement en français						
- Total (35)	14.95	16.59	14.29	15.31	0.98	3,101
- Vocabulary (9)	3.08	3.83	3.45	2.79	1.33	3,101
- Syntax (13)	5.94	6.39	5.48	7.02	1.34	3,101
- Grammar (10)	4.78	4.21	3.75	4.27	1.16	3,101
Test d'expression orale						
Global Evaluation						
- Pronunciation (5)	4.10	3.73	3.68	4.02	2.00	3,49
- Grammar (5)	3.77	3.49	3.20	3.83	4.25**	3,49
- Vocabulary (5)	4.09	3.60	3.34	4.01	10.90***	3,49
- Communication (5)	4.03	3.67	3.53	3.89	2.59	3,49

Table 7 (cont'd)

Summary of Grade 3 Test Results

for the Four Subgroups within the ALL Group[a]

	INT	PINT	NINT	HINT	F ratio	df
Test d'expression orale (cont'd)						
Item Analysis						
- Correct responses (21)	11.27	11.30	9.02	12.61	1.08	3,48
- Incorrect responses						
(i) grammatically	9.75	10.45	11.77	8.03	1.11	3,48
(ii) semantically[c]	—	—	—	—	—	—

** $p < .01$

*** $p < .001$

[a] Mean scores joined by a line differ significantly from one another.

[b] Maximum scores in parentheses.

[c] No statistical analysis here because very few students made this type of error.

Table 8

Summary of Grade 3 Test Results

for the Four Subgroups within the ALL Group[a]

	INT	PINT	NINT	HINT	F ratio	df
Test de rendement en math. (40)[a]	21.34	20.88	19.61	21.53	0.37	3,105
Test de math. C.E.P.G.M. (50)	35.00	N.A.	30.14	31.37	3.23*	2,56

N.A.: not administered

* $p < .05$

[a]Maximum scores in parentheses.

Appendix I

Explanation of Analysis of Covariance

Analysis of covariance is a statistical procedure which is similar to the analysis of variance in that it is used to compare the results of two or more groups on a particular test. At the same time, analysis of covariance mathematically reduces the influence that another variable, such as I.Q., might have on the test results. For example, if two hypothetical language groups under investigation differ *a priori* in terms of I.Q., and if it is believed that I.Q., will significantly influence performance on the test being administered (e.g., a reading test), then an analysis of covariance will estimate the significance of the language factor. This mathematical procedure is used when it is difficult or impossible to select groups which are equivalent in I.Q..

Appendix II

Interpretation of Stanine Scores

Stanine

The stanine scale is a simple nine-point scale of standard scores. (The word stanine was derived from STAndard NINE-Point scale). In this scale, raw scores are converted to scores which range from 1 (low) to 9 (high) with a mean of 5 and a standard deviation of 2.

Figure 1. Percentage of Cases at Each Stanine Level.

Meaning of Stanines
STA: Standard Score: NINE: Nine Step Scale